

The opinion in support of the decision being entered today was not written  
for publication and is not binding precedent of the Board.

Paper No. 17

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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Ex parte MICHAEL J. SULLIVAN et al.

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Appeal No. 2004-0919  
Application No. 09/842,607

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ON BRIEF

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Before GARRIS, NASE, and CRAWFORD, Administrative Patent Judges.  
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 to 39,  
which are all of the claims pending in this application.

We AFFIRM-IN-PART.

### BACKGROUND

The appellants' invention relates to golf balls and, more particularly, to improved golf balls comprising multi-layer covers which, in several embodiments, are formed from particular combinations of ionomers and/or polyurethane based materials. In several of the embodiments, the cover layers are also relatively thin. In other embodiments of the appellants' invention, the balls utilize a multi-layer core construction. The improved golf balls provide for enhanced distance and durability properties over conventional golf balls while at the same time offering enhanced "feel" and spin characteristics generally associated with soft balata and balata-like covers of the prior art (specification, p. 1). A copy of the dependent claims under appeal is set forth in the appendix to the appellants' brief. The independent claims on appeal read as follows:

1. A golf ball comprising:
  - a multi-layer core assembly including (i) a center core component, and (ii) a solid core layer disposed about said center core component; and
  - a multi-layer cover assembly including (i) an inner cover layer disposed on said core layer, and (ii) an outer cover layer disposed on said inner cover layer, said outer cover layer defining a plurality of dimples along an outer surface of said outer cover layer,
  - wherein at least one of said inner cover layer and said outer cover layer comprise a blend of less than 50% of a high acid ionomer and greater than 50% of a low acid ionomer.
11. A golf ball comprising:
  - a multi-layer core assembly including (i) a center core component, and (ii) a solid core layer disposed about said center core component; and
  - a multi-layer cover assembly including (i) an inner cover layer disposed on said core layer, and (ii) an outer cover layer disposed on said inner cover layer,

wherein at least one of said inner cover layer and said outer cover layer comprises a thermoplastic polyurethane.

25. A golf ball comprising:  
a multi-layer core assembly including (i) a center core component, and  
(ii) a solid core layer disposed about said center core component; and  
a multi-layer cover assembly formed about said multi-layer core assembly,  
said multi-layer cover assembly comprising (i) an inner cover layer disposed on  
said core layer, and (ii) an outer cover layer disposed on said inner cover layer,  
wherein said multi-layer core assembly exhibits a PGA compression of less than  
85.

The prior art references of record relied upon by the examiner in rejecting the  
appealed claims are:

Saito	4,919,434	Apr. 24, 1990
Horiuchi et al. (Horiuchi)	5,222,739	June 29, 1993

Claims 11, 14 to 26 and 29 to 39 stand rejected under 35 U.S.C. § 102(b) as  
being anticipated by Saito.

Claims 1 to 10, 12, 13, 27 and 28 stand rejected under 35 U.S.C. § 103 as being  
unpatentable over Saito in view of Horiuchi.

Rather than reiterate the conflicting viewpoints advanced by the examiner and  
the appellants regarding the above-noted rejections, we make reference to the answer

(Paper No. 14, mailed June 30, 2003) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 13, filed April 17, 2003) for the appellants' arguments thereagainst.

### OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

#### **The teachings of Saito**

Figure 1 of Saito is a cross-sectional view of a golf ball having a solid core 1 and a cover 2 consisting of an inner layer 3 and an outer layer 4 having dimples 5. Figure 2 of Saito is a cross-sectional view of a golf ball having a core 6 made of a center core 7 and an outer core 8, and a cover 9 consisting of an inner layer 10 and outer layer 11 having dimples 12.

The solid core is one which contains polybutadiene having more than 40%, preferably more than 60%, and more preferably more than 85% of cis-1,4 bond and an unsaturated carboxylic acid and/or a metal salt thereof to crosslink the polybutadiene

and deforms 1.5 to 3.5 mm, preferably 1.8 to 3.2 mm under a constant load of 100 kg.

The solid core may be incorporated with other rubbers such as styrene-butadiene rubber, natural rubber, isoprene rubber, etc. in addition to the polybutadiene rubber.

The amount of polybutadiene rubber in all the rubber components should be more than 50%, preferably more than 70% by weight. Saito teaches (column 4, lines 10-22) that:

It is necessary that the solid core deforms 1.5 to 3.5 mm, preferably 1.8 to 3.2 mm, under a constant load of 100 kg. This amount of deformation is essential for the solid golf ball having the outstanding characteristics. If the amount of deformation is less than 1.5 mm, the resulting ball is so hard that it provides a poor shot feeling. Conversely, if it is greater than 3.5 mm, the ball is poor in the coefficient of restitution and durability. It should be noted that the solid core having the deformation of 1.5 to 3.5 mm is selected from ones obtained from the above preparation procedure.

Saito then teaches (column 4, lines 23-57) that the solid core for the two-piece ball is required to have a narrow hardness distribution. In other words, the difference between the hardness at the center of the solid core and that at the outside should be less than 10%, preferably less than 5%, when measured by using a JIS (Japanese Industrial Standard) -A hardness tester. In the embodiment of Figure 2, the solid core is made up of a central part (center core) and one or more peripheral parts (outer cores) which differ from one another in hardness and/or density, although all of the layers (or the central part and peripheral parts) should contain polybutadiene having more than 40% of cis-1,4 bonds and an unsaturated carboxylic acid and/or a metal salt

thereof to crosslink the polybutadiene and deforms 1.5 to 3.5 mm under a constant load of 100 kg, and should not differ more than 10% in hardness from one another.

Saito provides (column 5, lines 16-23) that the inner layer that directly encloses the solid core is made of a comparatively soft thermoplastic resin. The thermoplastic resin for the inner layer includes, for example, ionomer resin, polyester elastomer, polyamide elastomer, thermoplastic urethane elastomer, propylene-butadiene copolymer, 1,2-polybutadiene, polybutene-1, and styrene-butadiene block copolymer. They may be used individually or in combination with one another. Preferable among them are ionomer resin, polyester elastomer, and blended materials thereof. Saito also provides (column 5, line 53, to column 6, line 12) that the outer cover layer enclosing the above-mentioned inner layer is formed from a hard thermoplastic resin. The thermoplastic resin for the outer layer includes, for example, ionomer resin, polyester elastomer, polyamide elastomer, thermoplastic urethane elastomer, propylene-butadiene copolymer, 1,2-polybutadiene, and styrene-butadiene copolymer. They may be used individually or in combination with one another. Preferable among them are ionomer resin and polyester elastomer.

### **The teachings of Horiuchi**

Horiuchi's invention relates to a golf ball having excellent impact resilience and good flying performance. The golf ball comprises a core and a cover covering the core, wherein the cover contains at least 20 % by weight of a carboxyl-rich ionomer resin prepared by neutralizing 15 to 80 mol % of carboxylic acid groups of an olefinic copolymer containing 16 to 30 % by weight of an alpha, beta-ethylenic unsaturated carboxylic acid with monovalent or divalent metal ions. Example 3 of Table 1 of Horiuchi teaches a golf ball cover made from a blend of 30% high acid ionomer and 70% low acid ionomer.

### **The anticipation rejection**

We sustain the rejection of claims 11, 14 to 26 and 29 to 39 under 35 U.S.C. § 102(b).

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Verdegaal Bros. Inc. v. Union Oil Co., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987). The inquiry as to whether a reference anticipates a claim must focus on what subject matter is encompassed by the claim and what subject matter is described by the reference. As set forth by the court in Kalman

v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984), it is only necessary for the claims to "'read on' something disclosed in the reference, i.e., all limitations of the claim are found in the reference, or 'fully met' by it."

The appellants argue (brief, pp. 5-6) that Saito does not teach each and every element of the golf ball of independent claims 11 and 25. Specifically, the appellants assert that the claimed PGA compression of less than 85 of the multi-layer core assembly is not an inherent feature of Saito.<sup>1</sup>

In the answer, the examiner (pp. 4-5) stated that since the appellants have not argued the limitations in claim 11 it was assumed that the appellants fully agree with the rejection.<sup>2</sup> The examiner then provided (answer, p. 5) a detailed explanation as to why the limitation found in only claim 25 that the multi-layer core assembly exhibits a PGA compression of less than 85 is inherently met by Saito.<sup>3</sup>

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<sup>1</sup> Independent claim 25 recites that the multi-layer core assembly exhibits a PGA compression of less than 85. Independent claim 11 does not recite this feature. Accordingly, the appellants have not particularly pointed out how the subject matter of claim 11 distinguishes over the teachings of Saito.

<sup>2</sup> The appellants did not file a reply brief to contest this assumption.

<sup>3</sup> The appellants did not file a reply brief to explain why the examiner's detailed explanation as to why the limitation that the multi-layer core assembly exhibits a PGA compression of less than 85 is not inherently met by Saito.



In our view, Saito does teach each and every element of the golf ball of independent claim 11. Claim 11 reads on Saito as follows: A golf ball (Saito's golf ball shown in Figure 2) comprising: a multi-layer core assembly including (i) a center core component (Saito's center core 7), and (ii) a solid core layer disposed about said center core component (Saito's outer core 8); and a multi-layer cover assembly including (i) an inner cover layer disposed on said core layer (Saito's inner layer 10), and (ii) an outer cover layer disposed on said inner cover layer (Saito's outer layer 11), wherein at least one of said inner cover layer and said outer cover layer comprises a thermoplastic polyurethane (Saito teaches that the thermoplastic resin for the inner or outer layer includes thermoplastic urethane elastomer).

Since all the limitations of claim 11 are disclosed in Saito for the reasons set forth above, the decision of the examiner to reject claim 11 under 35 U.S.C. § 102(b) is affirmed.

The appellants have grouped claims 11 and 14 to 24 as standing or falling together.<sup>4</sup> Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 14 to 24 fall with claim 11. Thus, it follows that the decision of the examiner to reject claims 14 to 24 under 35 U.S.C. § 102(b) is also affirmed.

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<sup>4</sup> See page 4 of the appellants' brief.

In our view, Saito does teach each and every element of the golf ball of independent claim 25. Claim 25 reads on Saito as follows: A golf ball (Saito's golf ball shown in Figure 2) comprising: a multi-layer core assembly including (i) a center core component (Saito's center core 7), and (ii) a solid core layer disposed about said center core component (Saito's outer core 8); and a multi-layer cover assembly formed about said multi-layer core assembly, said multi-layer cover assembly comprising (i) an inner cover layer disposed on said core layer (Saito's inner layer 10), and (ii) an outer cover layer disposed on said inner cover layer (Saito's outer layer 11), wherein said multi-layer core assembly exhibits a PGA compression of less than 85 (Saito's multi-layer core assembly inherently exhibits a PGA compression of less than 85 for the reasons set forth by the examiner on page 5 of the answer).

It is well settled that a prior art reference need not expressly disclose each claimed element in order to anticipate the claimed invention. See Tyler Refrigeration v. Kysor Indus. Corp., 777 F.2d 687, 689, 227 USPQ 845, 846-847 (Fed. Cir. 1985). Rather, if a claimed element is inherent in a prior art reference, then that element is disclosed for purposes of finding anticipation. See Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d at 631-33, 2 USPQ2d at 1052-54.

When relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. See Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Int. 1990). In this case, it is our opinion that the examiner has provided on page 5 of the answer a basis in fact and/or technical reasoning that reasonably supports the determination that the allegedly inherent characteristic (i.e., a multi-layer core assembly exhibiting a PGA compression of less than 85) necessarily flows from the teachings of Saito.

After the examiner establishes a prima facie case of anticipation based on inherency, the burden shifts to the appellants to prove that the subject matter shown to be in the prior art does not possess the characteristics of the claimed invention. See In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985); In re King, 801 F.2d 1324, 1327, 231 USPQ 136, 138 (Fed. Cir. 1986). Hence, appellants' burden before the United States Patent and Trademark Office (USPTO) is to prove that Saito's multi-layer core assembly does not exhibit a PGA compression of less than 85. The appellants have not come forward with any evidence to satisfy that burden. Compare In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977); In re Ludtke, 441 F.2d 660, 664, 169 USPQ 563, 566-67 (CCPA 1971).

Since all the limitations of claim 25 are disclosed in Saito for the reasons set forth above, the decision of the examiner to reject claim 25 under 35 U.S.C. § 102(b) is affirmed.

The appellants have grouped claims 25, 26 and 29 to 39 as standing or falling together.<sup>5</sup> Thereby, in accordance with 37 CFR § 1.192(c)(7), claims 26 and 29 to 39 fall with claim 25. Thus, it follows that the decision of the examiner to reject claims 26 and 29 to 39 under 35 U.S.C. § 102(b) is also affirmed.

### **The obviousness rejection**

We will not sustain the rejection of claims 1 to 10, 12, 13, 27 and 28 under 35 U.S.C. § 103.

In the rejection of claims 1 to 10, 12, 13, 27 and 28 under 35 U.S.C. § 103, the examiner (answer, p. 4) concluded that "[o]ne skilled in the art would have modified the golf ball of Saito with the cover of Horiuchi to provide excellent impact resilience and good flying performance."

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<sup>5</sup> See page 4 of the appellants' brief.

The appellants argue (brief, pp. 7-9) that the applied prior art does not suggest the claimed subject matter of claims 1 to 10, 12, 13, 27 and 28. We agree.

Claims 1 to 10, 12, 13, 27 and 28 require the golf ball to have a multi-layer cover assembly including an inner cover layer disposed on a core layer and an outer cover layer disposed on the inner cover layer wherein at least one of the inner cover layer and the outer cover layer includes an ionomer blend of less than 50% of a high acid ionomer and greater than 50% of a low acid ionomer. However, these limitations are not suggested by the applied prior art. In that regard, while Horiuchi does disclose in example 3 a cover layer having an ionomer blend of 30% of a high acid ionomer and 70% of a low acid ionomer, Horiuchi does not provide evidence that would have led an artisan to have modified Saito to arrive at the claimed invention. Specifically, we fail to find any motivation in the applied prior art that would have made it obvious at the time the invention was made to a person of ordinary skill in the art to have both retained Saito's inner layer 10 made of a comparatively soft thermoplastic resin and to have modified Saito's outer layer 11 (which Saito teaches is made of a hard thermoplastic resin) to be an ionomer blend of less than 50% of a high acid ionomer and greater than 50% of a low acid ionomer. At best, the teachings of Horiuchi would have led an artisan to have replaced both Saito's inner layer 10 and outer layer 11 with a single

cover layer having an ionomer blend of 30% of a high acid ionomer and 70% of a low acid ionomer.

In our view, the only suggestion for modifying Saito in the manner proposed by the examiner to arrive at the claimed invention stems from hindsight knowledge derived from the appellants' own disclosure. The use of such hindsight knowledge to support an obviousness rejection under 35 U.S.C. § 103 is, of course, impermissible. See, for example, W. L. Gore and Assocs., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

For the reasons set forth above, the decision of the examiner to reject claims 1 to 10, 12, 13, 27 and 28 under 35 U.S.C. § 103 is reversed.

#### CONCLUSION

To summarize, the decision of the examiner to reject claims 11, 14 to 26 and 29 to 39 under 35 U.S.C. § 102(b) is affirmed and the decision of the examiner to reject claims 1 to 10, 12, 13, 27 and 28 under 35 U.S.C. § 103 is reversed.

No time period for taking any subsequent action in connection with this appeal  
may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

BRADLEY R. GARRIS  
Administrative Patent Judge

JEFFREY V. NASE  
Administrative Patent Judge

MURRIEL E. CRAWFORD  
Administrative Patent Judge

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